KANIKSU SHORES ESTATES (PWSNO 1090065)
SOURCE WATER ASSESSMENT REPORT

June 3, 2002

State of Idaho
Department of Environmental Quality

Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the act. This risk assessment is based on a land use inventory in the well recharge zone, sensitivity factors associated with how the well was constructed, and aquifer characteristics.

This report, *Source Water Assessment for Kaniksu Shores Estates*, describes the public drinking water wells; the well recharge zone and potential contaminant sites located inside the recharge zone boundaries. This assessment, taken into account with local knowledge and concerns, should be used as a planning tool to develop and implement appropriate protection measures for this public water system. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

Kaniksu Shores Estates drinking water is supplied by two shallow wells pumping from a small aquifer near Oden Bay on the north side of Lake Pend Oreille. The water system serves a population of 62 people in a suburban housing development. The main water quality problem the system has had to contend with is corrosivity of the water. A groundwater Susceptibility Analysis DEQ conducted May 8, 2002 found the wells to be moderately susceptible to all classes of regulated contaminants, mostly because of natural risk factors associated with local geology.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Kaniksu Shores Estates already employs some important drinking water protection measures. The system is operated and maintained in substantial compliance with *Idaho Rules for Public Drinking Water Systems.* The system has installed an aeration system to control the corrosivity of its water. Voluntary drinking water protection measures Kaniksu Shores should consider are covering the well heads and fencing the area around them. The system should also adopt cross connection control regulations for its service area to prevent back siphonage of contaminants into the distribution system or wells during periods of low pressure, or the introduction of contaminants during normal operation by means of back pressure.

Because the water system may not have jurisdiction over the entire recharge zone delineated for its wells it will be important to establish partnerships with neighboring landowners to regulate land uses and activities that have the potential to degrade ground water quality. Due to the time involved with the movement of ground water, source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

For assistance in developing protection strategies, please contact your regional Department of Environmental Quality office or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR KANIKSU SHORES ESTATES

Section 1. Introduction - Basis for Assessment

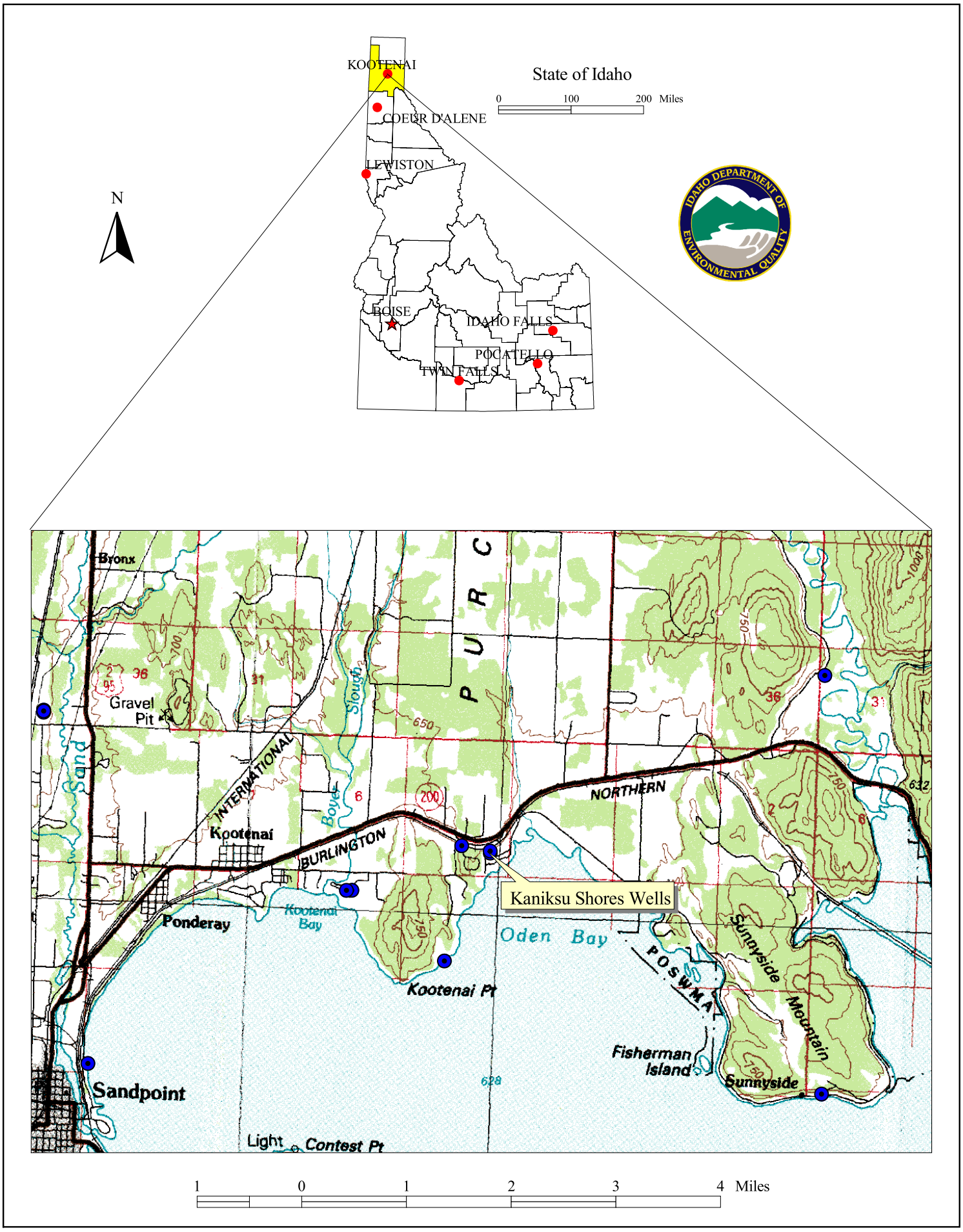
The following sections contain information necessary for understanding how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and an inventory of significant potential sources of contamination identified within that area are included. The ground water susceptibility analysis worksheets used to develop this assessment are attached.

Level of Accuracy and Purpose of the Assessment

The Idaho Department of Environmental Quality (DEQ) is required by the U.S. Environmental Protection Agency (EPA) to assess every public drinking water source in Idaho for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. These assessments are based on a land use inventory inside the delineated recharge zones, sensitivity factors associated with how the well is constructed, and aquifer characteristics. The state must complete more than 2900 assessments by May of 2003. Because resources and the time available to accomplish assessments are limited, an in-depth, site-specific investigation for every public water system is not possible.

The results of the source water assessment should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system. The ultimate goal of this assessment is to provide data to local communities for developing a protection strategy for their drinking water supply. The Idaho Department of Environmental Quality recognizes that pollution prevention activities generally require less time and money to implement than treating a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Wellhead or source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Figure 1. Geographic Location of Kaniksu Shores Estates



Section 2. Preparing for the Assessment

Defining the Zones of Contribution - Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the well recharge area into time of travel zones indicating the number of years necessary for a particle of water to reach a well. DEQ used a refined computer model approved by the EPA to determine the extent of well recharge zones for community water systems. The computer model used data assimilated by DEQ from a variety of sources including local well logs.

Kaniksu Shores Estates serves a community of 62 people in a residential development 2.25 miles east of Kootenai, Idaho (Figure 1). Drinking water for Kaniksu Shores Estates customers is supplied by two shallow wells. Well #1 is 46 feet deep and produces about 10 gpm. It is used as a back up source. Well #2, drilled to a depth of 85 feet, produces 33 gpm.

The delineated source water assessment area for Kaniksu Shores Estates is about 0.9 miles long and covers 97acres. It is divided into 0-3, 3-6 and 6-10 year time of travel zones. The primary direction of ground water flow is from northwest to southeast (Figure 2).

Identifying Potential Sources of Contamination

The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. Inventories for public water systems in Idaho were conducted in two-phases. The first phase involved identifying and documenting potential contaminant sources within the source water assessment areas through the use of computer databases and Geographic Information System maps developed by DEQ. The maps and inventory lists were then sent to system operators for verification and correction in the second or enhanced part of the inventory process.

Figure 2, *Kaniksu Shores Estates Delineation and Potential Contaminant Inventory* on page 7 of this report shows the location of the Kaniksu Shores Estates wells, and the zone of contribution DEQ delineated for them. The land use in the recharge zone is a mix of suburban residential with farm and ranch land.

Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. When a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation.

Section 3. Susceptibility Analysis

The susceptibility to contamination of all groundwater sources in Idaho is being assessed on the following factors:

- physical integrity of the well,
- hydrologic characteristics,
- land use characteristics, and potentially significant contaminant sources
- historic water quality

The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. A high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking. The Susceptibility Analysis Worksheets in Attachment A show in detail how the Kaniksu Shores Estates wells scored.

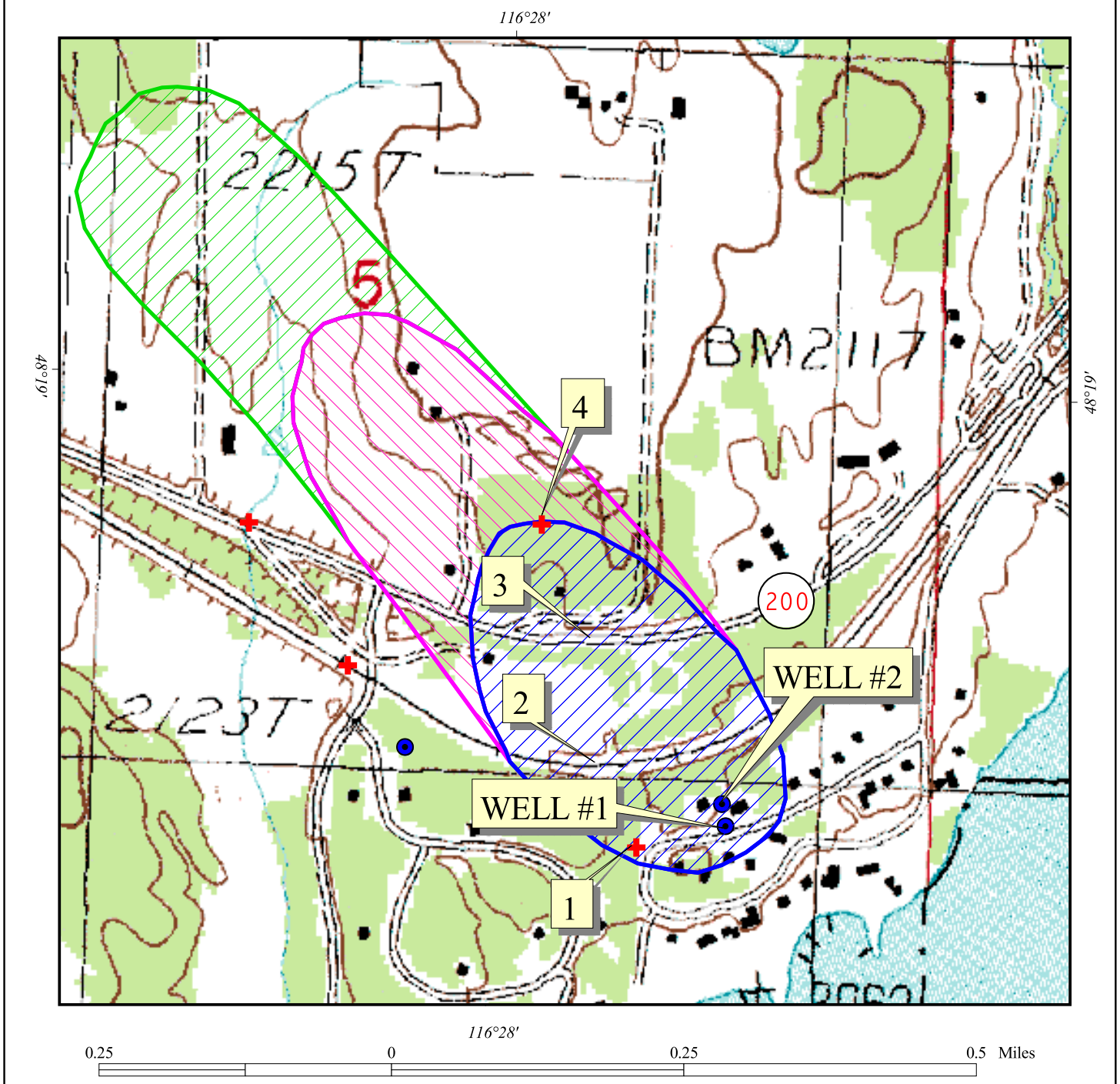
Well Construction

Well construction directly affects the ability of the wells to protect the aquifer from contaminants. Lower scores imply a well that can better protect the water. This portion of the susceptibility analysis relies on information from individual well logs and from the most recent sanitary survey of the public water system. The Kaniksu Shores Estates water system was last inspected on April 16, 2002. No deficiencies in wellhead or surface seal maintenance were noted at the time of the survey. Well logs for both wells are on file with DEQ.

Well #1 was drilled in August 1972 to a depth of 46 feet. The 6-inch steel casing extends from 1 foot above ground to the full depth of the well with perforations from 43 to 46 feet below the surface. The static water level in the well is at 29 feet. The cement grout surface seal is 18 feet deep. Current Idaho Department of Water Resources standards for drinking water wells in unconsolidated formations call for a minimum surface seal depth of 20 feet. The upper terminal of the well should project at least 18 inches above the final grade. The casing wall thickness, 0.25 inches is less than the currently required 0.28 inches for 6-inch pipe

Well #2 is about 100 feet north of Well #1. It was drilled in May 1977 to a depth of 85 feet. It has an 8-inch steel casing that is perforated from 79 to 84 feet below the surface, and a well screen set from 80 feet to 85 feet. The casing extends 1 foot above ground. The static water level is 43 feet below the surface. The surface seal for Well #2 is 20 feet deep, but it was constructed of well cuttings instead of cement grout or clay. The wall thickness, 0.283 inches, is less than the currently required thickness, 0.322 inches, for 8-inch steel casing.

Figure 2. Kaniksu Shores Estates Delineation and Potential Contaminant Inventory.



PWS # 1090065
Kaniksu Shores Estates
Well #1 and Well #2

kaniksu shores.apr
May 8, 2002

Hydrologic Sensitivity

The hydrologic sensitivity scores for the Kaniksu Shores Estates wells were 6 points out six points possible. The scores reflect natural geologic conditions in the recharge zone as a whole and at the well sites. Soils in the recharge zone for the Kaniksu Shores wells are classified as moderately well drained to well drained. Poorly drained to moderately well drained soils are deemed more protective of ground water than soils which drain faster. Ground water was first encountered between 40 and 46 feet below the surface in Well #1. The first water bearing stratum in Well #2 was between 35 and 43 feet. At both well sites, soils above the water table are a mixture of clay and gravel or gravel and boulders.

Potential Contaminant Sources and Land Use

Land use inside The Kaniksu Shores Estates well recharge zone is a mix of suburban residential with farm and ranch land. A community septic tank for the Kaniksu shores development is located about 400 feet west of the wells. The rail line and Highway 200, crossing the 0-3 and 3-6 year time of travel zones, are numbered separately on Figure 2 and on the table below, but were counted as a single source in the Susceptibility Analysis.

Table 1. Kaniksu Shores Estates Potential Contaminant Inventory

MAP ID NUMBER	SITE DESCRIPTION	POTENTIAL CONTAMINANTS[1]	TIME OF TRAVEL ZONE	SOURCE OF INFORMATION
1	Community Septic Tank	IOC, Microbial	0-3	Enhanced Inventory
2	Rail Line	IOC, SOC, VOC Microbial	0-3, 3-6	Geological Survey Map
3	Highway 200	IOC, SOC, VOC Microbial	0-3, 3-6	Geological Survey Map
4	Crop Land	IOC, SOC, VOC	0-3, 3-6	Enhanced Inventory

Historic Water Quality

The most important water quality issue Kaniksu Shores has had to contend with is corrosivity. With a 2.2 Langlier Index, the untreated water is aggressive enough to leach lead and copper from domestic plumbing in concentrations exceeding the action level for those contaminants. An aerator the system installed in 1997 alters the pH of the water. Lead/copper testing in 1998 confirmed the success of this treatment approach.

Kaniksu Shores has experienced sporadic contamination of the water distribution system with total coliform bacteria. Chemical and radiological test results are summarized on the table below.

Table 2. Kaniksu Shores Estates Chemical and Radiological Test Results

Primary IOC Contaminants (Mandatory Tests)							
Contaminant	MCL (mg/l)	Results (mg/l)	Dates	Contaminant	MCL (mg/l)	Results (mg/l)	Dates
Antimony	0.006	ND	1/13/81-12/12/01	Nitrate	10	ND to 1.2	1/13/81 to 12/10/01
Arsenic	0.01	ND	1/13/81-12/12/01	Nickel	N/A	ND	1/13/81-12/12/01
Barium	2.0	ND	1/13/81-12/12/01	Selenium	0.05	ND	1/13/81-12/12/01
Beryllium	0.004	ND	1/13/81-12/12/01	Sodium	N/A	4.0 to 4.7	1/22/85 to 11/26/01
Cadmium	0.005	ND	1/13/81-12/12/01	Thallium	0.002	ND	1/13/81-12/12/01
Chromium	0.1	ND	1/13/81-12/12/01	Cyanide	0.02	ND	1/13/81-12/12/01
Mercury	0.002	ND	1/13/81-12/12/01	Fluoride	4.0	ND	1/13/81-12/12/01

Secondary and Other IOC Contaminants (Optional Tests)			
Contaminant	Recommended Maximum (mg/l)	Results (mg/l)	Dates
Sulfate	--	4.2	3/4/97

Regulated and Unregulated Synthetic Organic Chemicals		
Contaminant	Results	Dates
29 Regulated and 13 Unregulated Synthetic Organic Compounds	None Detected	10/14/93-1/29/01

Regulated and Unregulated Volatile Organic Chemicals		
Contaminant	Results	Dates
21 Regulated And 16 Unregulated Volatile Organic Compounds	None Detected	10/14/93 -3/14/97

Radiological Contaminants			
Contaminant	MCL	Results	Dates
Gross Alpha, Including Ra & U	15 pC/l	0.02, 0.20 pC/l	10/16/00, 11/29/83
Gross Beta Particle Activity	4 mrem/year	0.6 mrem (Distribution) 1.2 mrem (Well #2)	10/16/00, 11/29/83 9/3/96

ND = none detected

Final Susceptibility Ranking

The Kaniksu Shores Estates wells ranked moderately susceptible to all classes of regulated contaminants. Risk factors associated with local geology added the most points to the final susceptibility scores. Final susceptibility scores and rankings relative to each category of regulated contaminants are summarized on Table 3. The complete analysis worksheets for the wells are in Attachment A.

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)
2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

The final ranking categories are as follows:

- 0 - 5 Low Susceptibility
- 6 - 12 Moderate Susceptibility
- > 13 High Susceptibility

Table 3. Summary of Kaniksu Shores Estates Susceptibility Evaluation

Final Susceptibility Scores/ Ranking				
	IOC	VOC	SOC	Microbial
Well #1	12/Moderate	11/Moderate	11/Moderate	12/Moderate
Well #2	12/Moderate	11/Moderate	11/Moderate	12/Moderate

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Kaniksu Shores Estates already employs some significant drinking water protection measures. The system is operated and maintained in substantial compliance with *Idaho Rules for Public Drinking Water Systems.* The system has installed an aeration system to control the corrosivity of its water.

Developing and enforcing cross connection control regulations in the service area is important for preventing contamination of the wells and distribution system during periods of low pressure. Back siphonage through automatic sprinkler systems is a particular concern in a residential area. Potential contamination through backpressure should also be addressed in any cross connection control program.

Voluntary drinking water protection measures Kaniksu Shores should consider are covering the well heads and fencing the area around them for security reasons and to control activities that could inadvertently cause contamination. Guidelines for protecting public drinking water systems through increased security measures are available on the DEQ website, www2.state.id.us/deq/water/water1.htm.

Every public water system should develop a drinking water emergency response plan. There is a simple fill-in-the-blanks form available on the website mentioned above to guide systems through the emergency planning process.

Because Kaniksu Shores Estates may not have jurisdiction over the entire recharge zone delineated for its wells it will be important to establish partnerships with neighboring landowners to regulate land uses and activities that have the potential to degrade ground water quality. Some of them may not be aware that their property is in a sensitive area where household, agricultural or business practices could have a negative impact on nearby wells. Public awareness and education is an important component of a drinking water protection plan, so Kaniksu Shores should consider promoting programs like Home*A*Syst or Farm*A*Syst in the well recharge zone. These are voluntary programs that help people assess environmental risks on their property and find technical support for making needed changes.

Due to the time involved with the movement of ground water, source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term

Assistance

Public water suppliers and users may call the following IDEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the IDEQ office for preliminary review and comments.

Coeur d'Alene Regional DEQ Office (208) 769-1422

State IDEQ Office (208) 373-0502

Website: http://www.deq.state.id.us

Water suppliers serving fewer than 10,000 persons may contact Melinda Harper of the Idaho Rural Water Association (208) 343-7001for assistance with drinking water protection strategies.

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

BML (Business Mailing List)– This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

Closed Or Open UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

References Cited

Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 1997. "Recommended Standards for Water Works."

Idaho Department of Agriculture, 1998. Unpublished Data.

Idaho Division of Environmental Quality, 1994. Ground Water and Soils Reconnaissance of the Lower Payette Area, Payette County, Idaho. Ground Water Quality Technical Report No. 5. Idaho Division of Environmental Quality. December 1994.

Idaho Division of Environmental Quality, 1996. Lower Payette River Agriculture Irrigation Water Return Study and Ground Water Evaluation, Payette County, Idaho. Water Quality Status Report No. 115.

Idaho Department of Environmental Quality, 1997. Design Standards for Public Drinking Water Systems. IDAPA 58.01.08.550.01.

Idaho Department of Environmental Quality, 2000. City of Fruitland Wellhead Viability Project 319 Grant Final Report July 2000.

Idaho Department of Water Resources, 1993. Administrative Rules of the Idaho Water Resource Board: Well Construction Standards Rules. IDAPA 37.03.09.

Natural Resource Conservation Service, 1991. Idaho Snake-Payette Rivers Hydrologic Unit Plan of Work. March 1991.

United States Geological Survey, 1986. Quality of Ground Water in the Payette River Basin, Idaho. United States Geological Survey. Water Resources Investigation Report 86-4013.

University of Idaho. 1986. Ground Water Resources in a Portion of Payette County, Idaho. Idaho Water Resources Research Institute. University of Idaho. Moscow, Idaho. April 1986.

Attachment A

Kaniksu Shores Estates Susceptibility Analysis Worksheets

Ground Water Susceptibility

Public Water System Name : **KANIKSU SHORES ESTATES** Source: **WELL #1**

Public Water System Number : **1090065** 5/8/02 8:50:01 AM

1. System Construction		SCORE			
Drill Date	8/22/72				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES 1996				
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		**4**			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
Total Hydrologic Score		**6**			
		IOC	VOC	SOC	Microbial
3. Potential Contaminant / Land Use - ZONE 1A (Sanitary Setback)		Score	Score	Score	Score
Land Use Zone 1A	SUBURBAN	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		**0**	**0**	**0**	**0**
Potential Contaminant / Land Use - ZONE 1B (3 YR. TOT)					
Contaminant sources present (Number of Sources)	Community Septic Tank Transportation	2	1	1	2
(Score = # Sources X 2) 8 Points Maximum		**4**	**2**	**2**	**4**
Sources of Class II or III leacheable contaminants or Microbials	YES	2	1	1	
4 Points Maximum		**2**	**1**	**1**	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	25% to 50% Agricultural Land	2	2	2	2
Total Potential Contaminant Source / Land Use Score - Zone 1B		**8**	**5**	**5**	**6**
Potential Contaminant / Land Use - ZONE II (6 YR. TOT)					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Land Use Zone II	25% to 50% Agricultural Land	1	10	10	
Potential Contaminant Source / Land Use Score - Zone II		**1**	**1**	**1**	
Potential Contaminant / Land Use - ZONE III (10 YR. TOT)					
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Irrigated agricultural lands occupy > 50% of Zone	NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III		**0**	**0**	**0**	**0**
Cumulative Potential Contaminant / Land Use Score		**9**	**6**	**6**	**6**
4. Final Susceptibility Source Score		**12**	**11**	**11**	**12**
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate

Ground Water Susceptibility

Public Water System Name : **KANIKSU SHORES ESTATES** Source: **WELL #2**

Public Water System Number : **1090065** 5/8/02 8:50:16 AM

1. System Construction		SCORE
Drill Date	5/24/77	
Driller Log Available	YES	
Sanitary Survey (if yes, indicate date of last survey)	YES 1996	
Well meets IDWR construction standards	NO	1
Wellhead and surface seal maintained	YES	0
Casing and annular seal extend to low permeability unit	NO	2
Highest production 100 feet below static water level	NO	1
Well located outside the 100 year flood plain	YES	0
Total System Construction Score		**4**

2. Hydrologic Sensitivity		
Soils are poorly to moderately drained	NO	2
Vadose zone composed of gravel, fractured rock or unknown	YES	1
Depth to first water > 300 feet	NO	1
Aquitard present with > 50 feet cumulative thickness	NO	2
Total Hydrologic Score		**6**

3. Potential Contaminant / Land Use - ZONE 1A (Sanitary Setback)		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	SUBURBAN	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		**0**	**0**	**0**	**0**
Potential Contaminant / Land Use - ZONE 1B (3 YR. TOT)					
Contaminant sources present (Number of Sources)	Community Septic Tank Transportation Corridor	2	1	1	2
(Score = # Sources X 2) 8 Points Maximum		4	2	2	4
Sources of Class II or III leacheable contaminants or Microbials	YES	2	1	1	
4 Points Maximum		**2**	**1**	**1**	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	25% to 50% Agricultural Land	2	2	2	2
Total Potential Contaminant Source / Land Use Score - Zone 1B		**8**	**5**	**5**	**6**
Potential Contaminant / Land Use - ZONE II (6 YR. TOT)					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Land Use Zone II	25% to 50% Agricultural Land	1	1	1	
Potential Contaminant Source / Land Use Score - Zone II		**1**	**1**	**1**	
Potential Contaminant / Land Use - ZONE III (10 YR. TOT)					
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Irrigated agricultural lands occupy > 50% of Zone	NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III		**0**	**0**	**0**	**0**
Cumulative Potential Contaminant / Land Use Score		**9**	**6**	**6**	**6**
4. Final Susceptibility Source Score		**12**	**11**	**11**	**12**
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate